(Practitioner's Docket No. IN or PAT-99153 /BC1-0047US)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Berhnard Lettmann et al. Serial No.: 10/018,336 Filed: October 30, 2001 For: AQUEOUS COATING MATERIAL AND MODULAR SYSTEM FOR PRODUCING SAME	Group Art Unit: 1796 Examiner: Nathan M. Nutter Confirmation No.: 2515 I hereby certify that the attached correspondence is being submitted by EFS-Web as an eFiled Response, addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on December 2, 2010 /James I. Voter/ James I. Voter

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APPEAL BRIEF

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is **BASF Coatings**.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to Appellants, Appellants' legal representatives, or assignee that will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF THE CLAIMS

Claims 3, 18, 19, 21, 22, 25, 26, 28 and 42-62 are pending in the application.

Claims 3, 18, 19, 21, 22, 25, 26, 28 and 42-62 stand finally rejected.

No Claims stand objected to.

No Claims stand withdrawn.

No Claims are allowed.

Claims 1-2, 4-17, 20, 23-24, 27, and 29-41 have been canceled.

Claims 3, 18, 19, 21, 22, 25, 26, 28 and 42-62 , as they currently stand, are set forth in Appendix A. Appellants hereby appeal the final rejection of Claims 3, 18, 19, 21, 22, 25, 26, 28 and 42-62.

IV. STATUS OF THE AMENDMENTS

All prior amendments have been entered. The amendment filed on August 3, 2010 has been entered as of the filing of the Appeal Brief.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention (as specified in the first independent claim 3) is directed to a process for preparing an aqueous coating material with precisely defined shade and optical effect, comprising mixing modules differing in material composition and function and stored separately from one another shortly before application of the coating material. Page 8, line 17, to page 9, line 23. The modules in the process comprise Modules (I), (II), (III), and optionally (IV), which comprise, respectively, a base color (A1), an aqueous color-imparting base color (A2), an

aqueous pigment-free mixing varnish (B), and aqueous medium (C). Application as originally filed at page 3, line 10, to page 5, line 10, and page 7, line 23, to page 8, line 3.

In particular, Module (I) comprises at least one module comprising less than 5% by weight water that provides at least one of color and effect, comprising at least one base color (A1) comprising less than 5% by weight water that imparts at least one of color and effect. Application as originally filed at page 8, line 17, to page 9, line 23, and page 14, lines 19-24. The base color comprises: (a11) at least one binder, wherein the at least one binder is optionally water-soluble or water-dispersible; (a12) at least one pigment that imparts at least one of color and effect; and (a13) at least one organic solvent, wherein the at least one organic solvent is optionally water-miscible, and optionally, at least one of: (a14) at least one crosslinking agent; (a15) at least one auxiliary; and (a16) at least one additive. Application as originally filed at page 8, line 17, to page 9, line 23 and page 74, line 25, to page 75, line 21.

Module (II) comprises at least one aqueous color module, comprising at least one aqueous color-imparting base color (A2), comprising: (a21) 10 to 80% by weight of at least one water-soluble or water-dispersible binder; (a22) 1 to 70% by weight of at least one inorganic color pigment or 1 to 30% by weight of at least one organic color pigment, optionally a combination of at least one organic color pigment and at least one inorganic color pigment; and (a23) 10 to 89% by weight water when 1 to 30% by weight of at least one organic color pigment is present, or 20 to 89% by weight water when 1 to 70% by weight of at least one inorganic color pigment is present; and optionally, at least one of: (a24) at least one organic solvent, wherein the at least one organic solvent is optionally water-miscible; (a25) at least one crosslinking agent; (a26) at least one auxiliary; and (a27) at least one additive.

Module (III) comprises at least one pigment-free mixing varnish module, comprising at least one aqueous, pigment-free mixing varnish (B) comprising: (b1) at least one water-soluble or water-dispersible binder; and (b2) water; and optionally, at least one of: (b3) at least one crosslinking agent; (b4) at least one auxiliary; and (b5) at least one additive. Page 8, line 17, to page 9, line 23.

The optional Module (IV) comprises at least one pigment-free rheology module, comprising: (C) an aqueous medium comprising: (c1) at least one rheology control additive; optionally, with the proviso that at least one of the at least one additives (a16), (a27), and (b5)

further comprises the at least one rheology control additive (c1). Page 7, line 23, to page 8, line 3.

Another aspect of the invention (as in the second independent claim 42) is more specifically directed to the process for preparing an aqueous coating material with precisely defined shade and optical effect, comprising mixing modules differing in material composition and function and stored separately from one another shortly before application of the coating material. Page 8, line 17, to page 9, line 23. Independent claim 42 contains all the limitation of independent claim 3 and additional limitations. Specifically, claim 42 requires a Module (IV), at least one pigment-free rheology module. Module (IV), which is no longer optional in this claim, comprises an aqueous medium and at least one rheology control additive. Page 7, line 23, to page 8, line 3.

In addition, claim 42 recites that the process is used to prepare an aqueous "basecoat" coating material "for use with a clearcoat applied wet-on-wet to produce a multicoat color, or color and effect, coating system," as supported on page 85, lines 13-24. Claim 42 further include limitations with respect to the amounts of the components in Module (A1), as supported on page 70-72.

Furthermore, Module (I) comprises at least one module comprising less than 5% by weight water that takes on all of the function of effect and part of the function of coloring or serves solely for imparting effect, comprising at least one base color (A1). Page 13, lines 9-10. A1 comprises less than 5% by weight water that imparts (i) color and effect or (ii) effect, comprising: (a11) 10 to 80% by weight of at least one binder, wherein the at least one binder is optionally water-soluble or water-dispersible; (a12) 0.5 to 70% by weight of at least one pigment that imparts (i) color and effect or (ii) effect; and (a13) 10 to 89.5% by weight of at least one organic solvent, wherein the at least one organic solvent is optionally water-miscible; and optionally, at least one of: (a14) at least one crosslinking agent; (a15) at least one auxiliary; and (a16) at least one additive. Page 70, lines 1-9.

The Modules (II) and (III) of independent claim 42 are the same as in independent claim 3. Module (IV) comprises at least one pigment-free rheology module comprising an aqueous medium (C). This (C) component comprises (c1) 0.5 to 50% by weight of at least one rheology control additive and 70 to 99.5% by weight of aqueous medium; optionally, with the proviso that

at least one of the at least one additives (a16), (a27), and (b5) further comprise the at least one rheology control additive (c1). Page 81, lines 7-15.

Another aspect of the invention (as in the third independent claim 53) is also directed to process for preparing an aqueous basecoat coating material with precisely defined shade and optical effect, for use with a clearcoat applied wet-on-wet to produce a multicoat color, or color and effect, coating system, wherein the process comprises a modular system having mixing modules differing in material composition and function and stored separately from one another shortly before application of the coating material, wherein the module system consists of four modules. Page 8, line 17, to page 9, line 23, and page 85, lines 13-24.

In particular, independent claim 53 contains all the limitation of independent claim 3 and additional limitations. Specifically, claim 53 requires Module (IV), a least one pigment-free rheology module. That is, Module (IV), which is no longer optional in these claims, comprises an aqueous medium and at least one rheology control additive. In addition, claim 53 recites that the process is used to prepare an aqueous "basecoat" coating material "for use with a clearcoat applied wet-on-wet to produce a multicoat color, or color and effect, coating system," as supported on page 85, lines 13-24. Independent claim 53 further requires that the module system "consists of" the four modules. Claim 53 further include limitations with respect to the amounts of the components in Module (A1), as supported on page 70, line 1, to page 72, line 5. Similarly, claim 53 further recites the amounts of the components in the at least one pigment-free mixing varnish Module (III), as supported on page 78, lines 19-24, and the amounts of the components in the at least one pigment-free rheology Module (IV), as supported on page 81, lines 7-15. Furthermore, claim 53 further requires that the binder (a11) in (A1) is a polyurethane containing carboxylic and/or carboxylate groups and optionally hydroxyl groups, having a number-average molecular weight of from 850 to 20,000 and an acid number of 20 to 150 mg KOH/g, as supported on page 51, lines 1-4. Claim 53 further requires that the at least one binder (a11), the at least one water-soluble or water-dispersible binder (a2l), and the at least one water-soluble or water-dispersible binder (b1) are polyurethane resins, as supported on page 22, lines 13-15, and page 84, line 2.

Modules (I) and (II) in claim 53 are the same as in claim 42. Module (III) is at least one pigment-free mixing varnish module, comprising at least one aqueous, pigment-free mixing varnish (B). This (B) component comprises (b1) from 10 to 80% by weight of at least one water-

soluble or water-dispersible binder; and (b2) from 20 to 90% by weight of water; and optionally, at least one of: (b3) at least one crosslinking agent; (b4) at least one auxiliary; and (b5) at least one additive. Page 3, line 10, to page 5, line 10, and page 78, lines 19-24.

Module (IV) is at least one pigment-free rheology module, comprising an aqueous medium (C). This (C) component comprises (c1) 1.5 to 25% by weight of at least one rheology control additive and 75 to 98.5% by weight of aqueous medium; optionally, with the proviso that at least one of the at least one additives (a16), (a27), and (b5) further comprise the at least one rheology control additive (c1). Page 3, line 10, to page 5, line 10, and page 81, lines 7-15.

Furthermore, the at least one binder (a11), the at least one water-soluble or water-dispersible binder (a2l), and the at least one water-soluble or water-dispersible binder (b1) are polyurethane resins. Page 83, line 27, to page 84, line 2. Also, the binder (a11) in Module (A1) is a polyurethane containing carboxylic and/or carboxylate groups and optionally hydroxyl groups having a number-average molecular weight of from 850 to 20,000 and an acid number of 20 to 150 mg KOH/g. Page 51, lines 1-4.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 3, 18, 19, 21, 22, 25, 26, 28, and 42-62 fail to comply with the written description requirement under 35 U.S.C. § 112, first paragraph.

2. Whether claims 3, 18, 19, 21, 22, 25, 26, 28, and 42-62 fail to particularly point out and distinctly claim the subject matter which the applicant regards as the invention under 35 U.S.C. § 112, second paragraph.

3. Whether claims 3, 18, 19, 21, 22, 25, 26, 28 and 42-62 are unpatentable under 35 U.S.C. §103(a) as being unpatentable over Reusmann et al, (US 6,403,701) taken in combination with Brock et al, (US 5,672,649), hereafter "Reusmann" and "Brock," respectively.

VII. ARGUMENT

Claims 3, 18, 19, 21, 22, 25, 26, 28, and 42-62 do not fail to comply with the written description requirement under 35 U.S.C. § 112, first paragraph.

Claims 3, 18, 19, 21, 22, 25, 26, 28 and 42-62 have been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiner states:

> The Examiner has re-read the Specification, and it is unclear what elements therein correspond to the claimed percents by weight of the constituents (a21), (a22) and (a23) at page 71 (line 5) to page 72 (line 18) in the Specification…It is pointed out to applicant that the Specification for (a23) the recitation of when "(a22) (is) from 1 to 30% by weight of at least one organic color pigment." The parameter for inclusion of (a23) as "at least 20 to 89 % by weight water when" (a22) includes "1 to 70% by weight of at least one inorganic color pigment" is not shown at-pages 75 and 76. The Specification does not teach the particular relationship of water and pigment as recited.

(06/03/2010 Final Office Action at page 2, last para.)

Appellants note that page 71 to page 72 of the application refer to (a12) to (a13), not (a21) to (a23). Thus, the Office Action appears to be confusing the components of A1 with A2. Support for (a21) to (a23) can be found on pages 74-75, not pages 71-72, referred to by the Office Action.

Appellants maintain that, as indicated in Appellants' Amendment of 2/08/2010, at page 15, para. 2, and Appellants' Amendment of 05/24/2010, the weight limitations in claim 3 are indeed supported at page 75, specifically lines 1-21, in cooperation with the limitations supported on page 74, last paragraph. Appellants, in the Amendment of August 3, 2010, submitted a copy of pages 74-75 of the originally filed Application with the relevant supporting limitations underlined in the Amendment.

Claims 3, 18, 19, 21, 22, 25, 26, 28, and 42-62 do not fail to particularly point out and distinctly claim the subject matter which the applicant regards as the invention under 35 U.S.C. § 112, second paragraph.

The Final Office Action stated that the relationship of a23 is not clear, since the claim requires both 10 to 89% by weight water and 20 to 89% b weight water.

Appellants respectfully submit that, in light of the specification, the claims can only be interpreted in the alternative, i.e., when inorganic pigment is used in the amount indicated, the amount of water is 10 to 89% by weight and when organic pigment is used in the amount indicated, then the amount of water is 20 to 89% by weight. This alternative limitation is further expressed by the word "or." (06/03/2010 Final Office Action at page 3, last para.)

Claims 3, 18, 19, 21, 22, 25, 26, 28 and 42-62 are non-obvious over Reusmann in view of Brock under 35 U.S.C. §103(a).

Claims 3, 18, 19, 21, 22, 25, 26, 54, 55, 57, 58, and 61.

The present invention relates to a modular (mixer) system for preparing aqueous coating materials in precision-attunable shades and optical effects, especially for automotive OEM finishing and refinish and in the painting of plastics. As such, the invention was developed as an improvement to prior art modular systems, as discussed in the present application under "Background to the Invention."

Appellants, in contrast to these prior art modular systems, developed a modular system that has some similarities to prior art modular systems but, in addition, provides increased hiding power and storage stability, two very important properties of such coating materials. Importantly also, the present system avoids the problem of decomposition of metallic effect pigments. The achievement of this combination of properties would not have been obvious to one of ordinary skill in the art. In fact, it was unpredictable and unexpected, as explained further below.

It should also be noted that the present claims are directed to a process, not just to a resulting composition, or to components of a resulting composition. The modules of the present system must comprise one or more storage-stable individual components. Thus, the individual components or compositions of the modules are not the same as mixing of compositions mixed immediately prior to preparation of a final "aqueous coating material" in the absence of storage capability. Storage stability is usually not inherent in a composition and cannot be assumed to exist, but typically must be pre-designed.

In light of the prior art, it was surprising and unforeseeable for one of ordinary skill in the art that the modular system of the present invention would have possessed a storage stability that matches or even exceeds that of known modular systems, while providing coating materials that have a significantly higher pigment content and can be used to produce coatings which in terms of their hiding power are superior to prior art coatings. As noted on page 12, lines 6-12, of the present specification, "Not least a surprise was the key advantage that the aqueous color module (II) and the aqueous, pigment-free mixing varnish Module (III), on the one hand, and the substantially water-free color and/or effect Module (I), on the other hand, are very highly compatible with one another and cause no problems whatsoever on mixing."

Significant advantages of the present invention are illustrated by the inventive examples and comparative example. The Table on page 97 provides an example in which, using the same viscosity for all coatings, the inventive coating could be furnished with a higher pigment content than the non-inventive coating material. In fact, as stated on page 98, lines 23-25, in terms of the overall visual impression it gave, the inventive multicoat system was clearly superior to the non-inventive system. As also evident from comparing the data in the Table on page 97, the inventive basecoat was also clearly superior to the non-inventive basecoat (which represents the cited prior art) in terms of pigment content (8% versus 2.9%) and hiding power (10 μm versus 20 μm).

The Final Office Action states that Reusmann teaches a mixing system for producing water-dilutable coatings that may have "precisely defined tinting from various base colors" and "special-effect pigments." The water-dilutable coating compositions may comprise a plurality of base colors (A) and at least one pigment-free component (B). The Final Office Action states that Reusmann teaches the employment of at least one rheology-controlling additive. The base colors (A) comprise less than 5% by weight of water, at least one pigment, an organic solvent, and at least one water-dilutable first binder. The component (B) comprises a pigment-free aqueous dispersion of polyurethane resin (second binder).

The Office Action states that Reusmann's component (A) is readable on the claimed (A1) base color in the claimed Module (I), and the component (B) is readable on the claimed aqueous, pigment-free varnish Module (III). The Office Action further states that the coating composition of Reusmann is taught to comprise a plurality of base colors (A). The base colors (A) comprise a combination of at least one organic coloring pigment and at least one inorganic coloring pigment, wherein suitable special-effect pigments can also be present. 06/03/2010 Final Office Action at page 5, para. 1, to page 6, line 14.

The Examiner appears to appreciate that Reusmann does not show present component (II) as a separate module of an aqueous color module comprising pigment, binder and water. 06/03/2010 Final Office Action at page 6, last three lines. The Office Action further notes that Reusmann "does not show three modules as the mixing system," although Reusmann "does disclose a mixing system that may comprise many modules as used for coating compositions using a plurality of base colors (A) separately storing each of said base colors." *Id.*

Accordingly, the Examiner appears to appreciate that Reusmann, by itself, cannot teach a major feature of the present invention, despite a number of similarities that can be expected to commonly exist among various module systems in the field. The Final Office Action, therefore, cites Brock for teaching the production and use of an aqueous coating system using modules. 06/03/2010 Final Office Action at page 7, para. 2. In particular, the Office Action states that Brock teaches the employment of an aqueous Module II that comprises the system noted in the instant claims as (A2), comprising a colorant, a binder and water. The Office Action states:

> The reference clearly shows the modules designated as (A2) and (IV), since at column 3 (lines 56-61) the reference teaches the use of "a rheology module." The reference shows the use of aluminum flake special effect pigments as known at column 2 (lines 54-63). Both references are drawn to aqueous coating mixer systems comprising modules. Since both are aqueous systems, the modules may be used from one in the other with a great expectation of success by the artisan having an ordinary skill in the art. Since the reference to Reusmann et al. shows the modules for use, although the rheology module is not separate, but as an additive in other modules, as herein claimed, the use of a rheology module, as taught by Brock et al would have been a prima facie obvious step. Likewise, the use of the modular system (A2) as taught by Brock et al., in the mixer system of Reusmann et al., would have been an obvious step. The references are drawn to identical systems that employ some differing modules. Both systems are aqueous-based systems. As such, inclusion of the modules taught by Brock et al. for the many modules disclosed by Reusmann et al. would have been a prima facie obvious modification. Nothing unexpected has been shown on the record.

(06/03/2010 Final Office Action at page7, para. 2, to page 7, para. 1.)

The Examiner is quite correct in referring to Reusmann as the primary reference since, as in the present invention, it is directed to a mixing or modular system. However, Reusmann clearly teaches a different modular system that produces coating compositions having improved condensation resistance. (Reusmann, column 1, line 8-10). In recent times, the requirements for water and moisture resistance, especially for condensation resistance, of automotive refinishes have risen. (Reusmann, column 2, lines 35-37.)

Reusmann discloses that it has surprisingly been found that the condensation resistance of finished coatings produced from the mixer systems of the general type described in DE-A4110520 can be increased considerably if the mixing component B described therein has added to it, as binder, a polymer which is obtainable by subjecting an ethylenically unsaturated monomer or a mixture of ethylenically unsaturated monomers to free-radical polymerization in the presence of a water-insoluble initiator and in an aqueous dispersion of a polyurethane resin

which has a number-average molecular weight of between 1000 and 30,000 Daltons and on average from 0.05 to 1.1 polymerizable double bonds, wherein the weight ratio between the polyurethane resin and the ethylenically unsaturated monomer or monomer mixture is between 1:10 and 10:1. (Reusmann, column 2, lines 43-58).

Reusmann's modular system is a system, not merely arbitrary compositions. Consequently, there is no expectation that any composition *per se* can be used in the module system merely because it is a coating composition or component thereof. Importantly, Reusmann states:

> It is essential to the invention that the base colors A are essentially, and preferably completely, free of water. The water content of the base colors should be less than 5% by weight, based on the overall weight of the base color. [Col. 4, lines 56-59.]

Component A of Reusmann corresponds to Module I of the present invention. Thus, Reusmann states:

> Component A is prepared by methods known to the skilled worker, by mixing and, if desired, dispersing the individual components [of Component A]. Thus, the incorporation of coloring pigments usually takes place by dispersing the respective pigments with one or more of the above-described binders, which are preferably employed in the form of solutions in organic solvents. If desired, further organic solvent can be added for dispersing. [Col. 5, lines 28-37.]

Component A is solvent-based and all the color and/or effect is provided by Component A. No color is provided by an aqueous component in Reusmann. Component B, the water-containing module of Reusmann, corresponds to Module III in the present invention. No color is provided therein. Referring to claim 1 of Reusmann, the system comprises "at least one pigment-free component B." It is without a doubt that the module system of Reusmann excludes the use of Module II of the present invention.

In fact, Reusmann describes their invention as an improvement on the modular system (or mixer system) of DE-A 41 10 520. See Col. 1, line 66, to col. 2, line 37, of Reusmann. Reusmann describes DE-A 41 10 520 as follows:

> Mixer systems in accordance with DE-A 41 10 520 consist of:
> A) various base colors, which contain less than 5% by weight of water.....and
> B) at least one water-containing, pigment-free component B. [Col. 2, lines 14-22.]

Similarly, the present originally filed application states, immediately on page 1, regarding this same prior art.

> The German patent application DE-A-41 10 520 discloses a mixer system [that] comprises substantially water-free color and/or effect base colors and at least one aqueous, pigment-free mixing vanish. Owing to their variability, this mixer system and the coating materials prepared from it go a substantial way toward meeting the ever-increasing requirements of the market. However, they are still capable of further improvement in terms of their hiding power.

Importantly, the present originally filed application further states on page 73, lines 6-8, in distinction to DE-A-41 10 520, that "The further key constituent of the modular system of the invention is at least one aqueous color module (II)."

Since Reusmann is directed to a modular system (or mixing system) for preparing a final aqueous coating material to be applied to a substrate, which modular system is contrary to the modular system of the present system, it would be necessary for an obviousness rejection to show the reason or motivation for Reusmann to change its modular system, not merely to show one particular composition or binder outside such a system. In terms of modules in a module system that are used to form an aqueous coating material by dilution with a component (B), namely a water-containing, pigment-free component, Reusmann teaches only solvent-borne base color modules. Moreover, it is very unlikely that Reusmann would be motivated to modify its system with an additional component that, not only violates the "essential" guidelines or requirements of the system, but that would require, for no good reason, the difficulties or problems of additional storage, additional mixing complications, and additional time and expense.

Turning now to the secondary reference, Appellants submit that Brock discloses a process for preparing aqueous coating systems by mixing at least two storage-stable pre-mixed aqueous modules, in which: (A) is an aqueous special effect module and (B) is an aqueous binder module. Abstract. The modular system of Brock can further include a dye module (C) containing pigments and water, (D) a rheology module, and (E) and crosslinking module. Col. 2, lines 20-36.

Appellants respectfully submit that it is quite apparent that Brock does not teach the substantially water-free color and/or effect-imparting Module (I) of the presently claimed invention.

Recalling, as explained above, that Reusmann does not show present component (II) as a separate module, i.e., an aqueous color module comprising pigment, binder and water, then citing Brock for such a module would also teach replacing Reusmann's substantially non-aqueous Module (I) with an aqueous module as in Brock. The Office has not responded to this point of contention.

In other words, a modular system, as a commercial necessity, is fundamentally based on required relationships among each of the modules in the system, so that individual modules among diverse systems are not subject to haphazard permutations. Accordingly, the inconsistencies between Brock and Reusmann cannot be ignored.

The Office Action asserts that it would be obvious to combine Brock's water-containing pigment module with Reusmann's mixing system to arrive at Appellants' claimed invention, because such modules are individually conventional.

Appellants respectfully disagree, since Brock discloses a system where both an effect pigment Module I(A) and a color pigment Module III(B) are *water-containing*, in the overall context of a system where all the modules contain water. The combination proposed by the Office Action ignores the clear teaching of Brock to ***concomitantly replace*** the Reusmann water-free pigment module with water-containing pigment modules, and instead proposes to *leave* Reusmann's water-free pigment module in the system, ***adding*** only Brock's optional water-containing color pigment Module IV(C) to Reusmann's system, which of course conveniently arrives at Appellants' claimed mixing system. The Office has not responded to this point of contention.

If known modules in the prior art are always simply being used for their known purpose as asserted by the Office Action, Appellants submit that there would be no reason to keep the water-free pigment module of Reusmann, since the both color and effect would already be provided by Brock's water-containing pigment Modules I(A) and III(B). Of course, Appellants have now discovered (and demonstrated in the application's comparative example) that a system with both a water-containing pigment module and a substantially water-free pigment module unexpectedly provides greater pigment loadings, ***but no such unexpected result has been shown in the prior art***.

Appellants respectfully submit that no reason or motivation has been shown, absent hindsight gleaned from Appellants' claimed invention, to adopt the selective approach of

"picking and choosing" Brock's components for arbitrarily inserting into Reusmann's specified system in order to obtain the combination that would be needed to support the Office Action's rejection. Taken as a whole, the cited combination fails to provide the requisite motivation for a *prima facie* case of obviousness.

Furthermore, unexpected results are shown by the comparative data on page 96 of the present application. Thus, the Office Action is incorrect in repeatedly alleging that no unexpected results have been shown. (06/03/2010 Final Office Action at page 11, last line, and page 10, lines 9-11.) In fact, "The comparison of the inventive example with the comparative example shows that the inventive coating material could be furnished with a higher pigment content than the non-inventive coating material...the inventive multicoat system was clearly superior to the non-inventive system." (Application as filed on page 97.)

Appellants respectfully submit that, since the present invention is directed to a modular system, the fact the elements are individually disclosed in prior art references cannot teach the present invention. The Office Action has shown no motivation or reasonable explanation for modifying Reusmann to obtain the presently claimed relationship between individual elements that is the evident key to the invention. There is no basis for alleging that individual elements in diverse prior art modular systems are interchangeable in the absence of a reasonable motivation, as would be appreciated by one of ordinary skill in the art of automotive coatings. Furthermore, the fact that the modification is directly contrary to the clear and express requirements of the references themselves, alone or in combination, strongly suggests that the arbitrary "picking and choosing" of components from these references simply cannot be a matter of interchanging equivalents. Again, the skilled artisan would have a high level of expectation of failure when arbitrarily combining diverse teachings in way that is inconsistent with the teachings of both Reusmann and Brock.

The Office, in responding to Appellants' arguments during prosecution, has not follow the requirement of 35 USC §103 that a determination of obviousness requires consideration of the invention as a whole. Thus, the Office persists in contending that individual separate modules in two different systems are interchangeable, contrary to the expectation of one of ordinary skill in the art. The Final Office Action, for example, incorrectly states that the references show "the conventionality of the several elements, employed in identical capacities." (06/03/2010 Final Office Action at page 9, lines 2-3.) In fact, since the systems are very

significantly different, actually inconsistent as explained above, the elements are simply not employed in identical capacities considering the invention as a whole, the relationship of components, their key interactions, and their properties such as stability. The Office action insists, "The use of known elements, as disclosed, in known fashion, as disclosed, would be obvious." (06/03/2010 Final Office Action at page 9, lines 3-6.) In fact, the modules in the claimed invention are not used in known fashion, since all the prior art systems are different. The skilled artisan would not have a high level of expectation of success by mixing diverse individual modules from different systems, contrary to the specific teachings of the references themselves, because such systems are, in fact, designed to be part of a system, not designed to be interchangeable. Rather than "known," the present invention is based on unpredictable experimentation as demonstrated in the examples in the specification as originally filed. The Final Office Action states:

> Appellants have not demonstrated any clear reasoning or evidence as to why the use of the modules of Brock et al would be suitable in the system of Reusmann et al.

[06/03/2010 Final Office Action at page 9, last 4 lines.]

First, it is assumed that there is a missing word in the quoted portion. Second, it is not the burden of the inventors to provide the reasoning or evidence for a prior art rejection or explain why an allegedly obvious combination of elements in different prior art references would not suitably work. Appellants respectfully submit that this assertion in the Office Action represents an error of law.

Claims 42 and 43-52, 59, and 62

Independent claim 42 contains all the limitation of independent claim 3 and additional limitations. Hence, all the arguments above with respect to independent claim 3 apply here to independent claim 42 and claims dependent thereon. Claim 42 further specifies that the module system further comprises at least one pigment-free rheology Module (IV). Appellants respectfully asserts that these claims are, therefore, further patentable over Reusmann and Brock at least because the combination does not teach or suggest Appellants' four separate modules in the claimed process.

Additionally, claim 42 further include limitations with respect to the amounts of the components in Module I(A1), which are not disclosed in the prior art considering the invention as a whole.

Claim 53

Independent claim 53 contains all the limitations of independent claims 3 and 42 and significant additional limitations. Hence, all the arguments above with respect to independent claims 3 and 42 apply here to independent claim 53. Specifically, claim 53 requires the Module (IV), a least one pigment-free rheology module. Reusmann and Brock do not teach or suggest the four separate modules in the process of claim 53. Independent claim 53 further requires that the module system "consists of" the four modules. Claim 53 further includes limitations with respect to the amounts of the components in Module I(A1), the amounts of the components in the at least one pigment-free mixing varnish Module (III), and the amounts of the components in the at least one pigment-free rheology Module (IV). Such a combination of ranges are nowhere disclosed in the module system of Reusmann alone or in combination with Brock. Furthermore, claim 53 further require that the binder (a11) in Module I(A1) is a polyurethane containing carboxylic and/or carboxylate groups and optionally hydroxyl groups, having a number-average molecular weight of from 850 to 20,000 and an acid number of 20 to 150 mg KOH/g, and that the at least one binder (a11), the at least one water-soluble or water-dispersible binder (a2l), and the at least one water-soluble or water-dispersible binder (b1) are polyurethane resins. The invention as a whole, including these limitations, is not remotely taught by Reusmann and Brock, alone or in combination.

"A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). To find obviousness, the Examiner must "identify a reason that would have prompted a person of ordinary skill in the art in the relevant field to combine the elements in the way the claimed new invention does." *Id.* In this regard, it is held that "[a] *prima facie* case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention." *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997). A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. MPEP 2141.02 VI; *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983) cert. denied, 469 U.S. 851 (1984).

Respectfully submitted,

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VIII. CLAIMS APPENDIX

3. A process for preparing an aqueous coating material with precisely defined shade and optical effect, comprising mixing modules differing in material composition and function and stored separately from one another shortly before application of the coating material, wherein the modules comprise:

(I) at least one module comprising less than 5% by weight water that provides at least one of color and effect, comprising:

(A1) at least one base color comprising less than 5% by weight water that imparts at least one of color and effect comprising:

(a11) at least one binder, wherein the at least one binder is optionally water-soluble or water-dispersible;

(a12) at least one pigment that imparts at least one of color and effect; and

(a13) at least one organic solvent, wherein the at least one organic solvent is optionally water- miscible;

and optionally, at least one of:

(a14) at least one crosslinking agent;

(a15) at least one auxiliary; and

(a16) at least one additive;

(II) at least one aqueous color module, comprising:

(A2) at least one aqueous color-imparting base color, comprising:

(a21) 10 to 80% by weight of at least one water-soluble or water-dispersible binder;

(a22) 1 to 70% by weight of at least one inorganic color pigment or 1 to 30% by weight of at least one organic color pigment, optionally a combination of at least one organic color pigment and at least one inorganic color pigment; and

(a23) 10 to 89% by weight water when 1 to 30% by weight of at least one organic color pigment is present, or 20 to 89% by weight water when 1 to 70% by weight of at least one inorganic color pigment is present;

and optionally, at least one of:

(a24) at least one organic solvent, wherein the at least one organic solvent is optionally water- miscible;

(a25) at least one crosslinking agent;

(a26) at least one auxiliary; and

(a27) at least one additive;

and

(III) at least one pigment-free mixing varnish module, comprising:

(B) at least one aqueous, pigment-free mixing varnish, comprising:

(b1) at least one water-soluble or water-dispersible binder; and

(b2) water;

and optionally, at least one of:

(b3) at least one crosslinking agent;

(b4) at least one auxiliary; and

(b5) at least one additive;

and optionally:

(IV) at least one pigment-free rheology module, comprising:

(C) an aqueous medium, comprising:

(c1) at least one rheology control additive;

optionally, with the proviso that at least one of the at least one additives (a16), (a27), and (b5) further comprises the at least one rheology control additive (c1).

18. The process of claim 3, wherein the at least one base color (A1) imparts one of i) effect or ii) color and effect.

19. The process of claim 3, wherein the modules comprise one of:

(i) the at least one module (I) comprising less than 5% by weight water that provides color, the at least one aqueous color module (II), and the at least one pigment-free mixing varnish module (III),

(ii) the at least one module (I) comprising less than 5% by weight water that provides color and effect, the at least one aqueous color module (II), and the at least one pigment-free mixing varnish module (III), and

(iii) the at least one module (I) comprising less than 5% by weight water that provides effect, , the at least one aqueous color module (II), and the at least one pigment-free mixing varnish module (III).

21. The process of claim 3, wherein the at least one additive (b5) comprises the at least one rheology control additive (c1).

22. The process of claim 3, wherein the modules comprise the at least one pigment-free rheology module (IV).

25. The process of claim 3, wherein the at least one binder (a11), the at least one water-soluble or water-dispersible binder (a21), and the at least one water-soluble or water-dispersible binder (b1) are of a same polymer class.

26. The process of claim 25, wherein the at least one binder (a11), the at least one water-soluble or water-dispersible binder (a2l), and the at least one water-soluble or water-dispersible binder (b1) are polyurethane resins.

28. The process of claim 3, wherein the at least one water-soluble or water-dispersible binder (a21) and the at least one water-soluble or water-dispersible binder (b1), and optionally the at least one binder (a11), comprise functional groups that can be converted into anions by at least one of neutralizing agents and anionic groups.

42. A process for preparing an aqueous coating material with precisely defined shade and optical effect, comprising mixing modules differing in material composition and function and stored separately from one another shortly before application of the coating material, wherein the modules comprise:

(I) at least one module comprising less than 5% by weight water that takes on all of the function of effect and part of the function of coloring or serves solely for imparting effect, comprising:

(A1) at least one base color comprising less than 5% by weight water that imparts (i) color and effect or (ii) effect, comprising:

(a11) 10 to 80% by weight of at least one binder, wherein the at least one binder is optionally water-soluble or water-dispersible;

(a12) 0.5 to 70% by weight of at least one pigment that imparts (i) color and effect or (ii) effect; and

(a13) 10 to 89.5% by weight of at least one organic solvent, wherein the at least one organic solvent is optionally water-miscible;

and optionally, at least one of:

(a14) at least one crosslinking agent;

(a15) at least one auxiliary; and

(a16) at least one additive;

(II) at least one aqueous color module, comprising:

(A2) at least one aqueous color-imparting base color, comprising:

(a21) 10 to 80% by weight of at least one water-soluble or water-dispersible binder;

(a22) 1 to 70% by weight of at least one inorganic color pigment or 1 to 30% by weight of at least one organic color pigment, optionally a combination of at least one organic color pigment and at least one inorganic color pigment; and

(a23) 10 to 89% by weight water when 1 to 30% by weight of at least one organic color pigment is present, and 20 to 89% by weight water when 1 to 70% by weight of at least one inorganic color pigment is present;

and optionally, at least one of:

(a24) at least one organic solvent, wherein the at least one organic solvent is optionally water- miscible;

(a25) at least one crosslinking agent;

(a26) at least one auxiliary; and

(a27) at least one additive;

and

(III) at least one pigment-free mixing varnish module, comprising:

(B) at least one aqueous, pigment-free mixing varnish, comprising:

(b1) at least one water-soluble or water-dispersible binder; and

(b2) water;

and optionally, at least one of:

(b3) at least one crosslinking agent;

(b4) at least one auxiliary; and

(b5) at least one additive;

and:

(IV) at least one pigment-free rheology module, comprising:

(C) an aqueous medium, comprising:

(c1) 0.5 to 50% by weight of at least one rheology control additive and 70 to 99.5% by weight of aqueous medium;

optionally, with the proviso that at least one of the at least one additives (a16), (a27), and (b5) further comprise the at least one rheology control additive (c1).

43. The process of claim 42 wherein the aqueous coating material that is prepared has a pigment content of at least about 8.0%.

44. The process of claim 42 wherein the at least one pigment-free rheology module comprises a phyllosilicate.

45. The process of claim 42 wherein the at least one base color (A1) comprises only effect pigments or only color pigments.

46. The process of claim 42 wherein the at least one base color (A1) comprises an effect pigment selected from the group consisting of metal flake pigment, pearlescent pigment, interference pigment, and mixtures thereof.

47. The process of claim 42 wherein the module (I) takes on all of the function of effect and part of the function of coloring.

48. The process of claim 42 wherein the module (I) serves solely for imparting effect.

49. The process of claim 42 wherein the binder (a11) in module (A1) is an acrylate addition copolymer, polyester, and/or polyurethane, each containing carboxylic and/or carboxylate groups and optionally hydroxyl groups, having a number-average molecular weight of from 850 to 20,000.

50. The process of claim 49, wherein the at least one binder (a11), the at least one water-soluble or water-dispersible binder (a2l), and the at least one water-soluble or water-dispersible binder (b1) are polyurethane resins, and wherein the polyurethane resin (a11) has an acid number of 20 to 150 mg KOH/g.

51. The process of claim 42, wherein the at least one additive (b5) in the mixing varnish further comprises at least one rheology control additive.

52. The process of claim 50 wherein the process further comprises applying the coating material prepared using the modular system to a substrate to obtain a basecoat film and, following initial drying of the basecoat film, applying a clearcoat wet-on-wet to produce a multicoat color, or color and effect, coating system.

53. A process for preparing an aqueous basecoat coating material with precisely defined shade and optical effect, for use with a clearcoat applied wet-on-wet to produce a multicoat color, or color and effect, coating system, wherein the process comprises a modular system having mixing modules differing in material composition and function and stored separately from one another shortly before application of the coating material, wherein the module system consists of the following four modules:

(I) at least one module comprising less than 5% by weight water that takes on all of the function of effect and part of the function of coloring, comprising:

(A1) at least one base color comprising less than 5% by weight water that imparts color and effect comprising:

(a11) 10 to 80% by weight of at least one binder, wherein the at least one binder is optionally water-soluble or water-dispersible;

(a12) 0.5 to 70% by weight of effect pigment and color pigment; and

(a13) 10 to 89.5% by weight of at least one organic solvent, wherein the at least one organic solvent is optionally water- miscible;

and optionally, at least one of:

(a14) at least one crosslinking agent;

(a15) at least one auxiliary; and

(a16) at least one additive;

(II) at least one aqueous color module, comprising:

(A2) at least one aqueous color-imparting base color, comprising:

(a21) 10 to 80% by weight of at least one water-soluble or water-dispersible binder;

(a22) 1 to 70% by weight of at least one inorganic color pigment or 1 to 30% by weight of at least one organic color pigment, optionally a combination of at least one organic color pigment and at least one inorganic color pigment; and

(a23) 10 to 89% by weight water when 1 to 30% by weight of at least one organic color pigment is present, and 20 to 89% by weight water when 1 to 30% by weight of at least one organic color pigment is present;

and optionally, at least one of:

(a24) at least one organic solvent, wherein the at least one organic solvent is optionally water- miscible;

(a25) at least one crosslinking agent;

(a26) at least one auxiliary; and

(a27) at least one additive;

and

(III) at least one pigment-free mixing varnish module, comprising:

(B) at least one aqueous, pigment-free mixing varnish, comprising:

(b1) from 10 to 80% by weight of at least one water-soluble or water-dispersible binder; and

(b2) from 20 to 90% by weight of water;

and optionally, at least one of:

(b3) at least one crosslinking agent;

(b4) at least one auxiliary; and

(b5) at least one additive;

and:

(IV) at least one pigment-free rheology module, comprising:

(C) an aqueous medium, comprising:

(c1) 1.5 to 25% by weight of at least one rheology control additive and 75 to 98.5% by weight of aqueous medium;

optionally, with the proviso that at least one of the at least one additives (a16), (a27), and (b5) further comprise the at least one rheology control additive (c1);

wherein the at least one binder (a11), the at least one water-soluble or water-dispersible binder (a2l), and the at least one water-soluble or water-dispersible binder (b1) are polyurethane resins, and wherein the binder (a11) in module (A1) is a polyurethane containing carboxylic

and/or carboxylate groups and optionally hydroxyl groups having a number-average molecular weight of from 850 to 20,000 and an acid number of 20 to 150 mg KOH/g.

54. The process of claim 3, wherein the at least one binder (a11), the at least one water-soluble or water-dispersible binder (a2l), and the at least one water-soluble or water-dispersible binder (b1) are the same.

55. The process of claim 3, wherein the at least one binder (a11), the at least one water-soluble or water-dispersible binder (a2l), and the at least one water-soluble or water-dispersible binder (b1) each comprise a mixture of at least two binders, and the mixing ratio of the binders in (a11), (a21), and (b1) is the same in each.

56. The process of claim 42, wherein the at least one rheology control additive (c1) present in module (IV) is crosslinked polymeric microparticles, an inorganic phyllosilicate, a silica, a polyvinyl alcohol, a poly(meth)acrylamide, a poly(meth)acrylic acid, a polyvinylpyrrolidone, a styrene-maleic anhydride copolymer or derivative thereof, a ethylene-maleic anhydride copolymer or derivative thereof, a hydrophobically modified ethoxylated urethane, a hydrophobically modified polyacrylate, or a combination comprising one or more of the foregoing rheology control additives.

57. The process of claim 3, wherein said pigment (a12) comprises metal flake effect pigment.

58. The process of claim 57, wherein said metal flake pigment comprises aluminum flake.

59. The process of claim 42, wherein said pigment (a12) comprises metal flake effect pigment.

60. The process of claim 59, wherein said metal flake pigment comprises aluminum flake.

61. The process of claim 3, wherein the module (II) serves solely for imparting color.

62. The process of claim 48, wherein the module (II) serves solely for imparting color.

IX. EVIDENCE APPENDIX

There is no evidence submitted pursuant to 37 C.F.R. §1.130, 37 C.F.R. §1.131, or 37 C.F.R. §1.132 or any other evidence entered by the Examiner and relied upon by the Appellant in this appeal, known to the Appellants, Appellants' legal representatives, or assignee.

[NONE]

X. RELATED PROCEEDING APPENDIX

There are no other related appeals or interferences known to Appellants, Appellants' legal representatives, or assignee that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

[NONE]